Please type a plus sign (+) inside this box → [+]

PTO/SB/05 (4/98)
Approved for use through 09/30/2000. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No.	NPK004US
First Inventor or Application Identifier	Paul Lapstun
Title	NETWORK TERMINAL AUTHORIZATION PROTOCOL
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. [X] * Fee Transmittal Form *(e.g., PTO/SB/17)*
   (Submit an original and a duplicate for fee processing)
2. [X] Specification [*Total Pages* 76]
   (preferred arrangement set forth below)
   - Descriptive title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to Microfiche Appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
3. [X] Drawing(s) *(35 U.S.C. 113)* [*Total Sheets* 47]
4. Oath or Declaration [*Total Pages* 3]
   a. [X] Newly executed (original or copy)
   b. [ ] Copy from a prior application (37 C.F.R. § 1.63(d))
   (for continuation/divisional with Box 16 completed)
   i. [ ] DELETION OF INVENTOR(S)
   Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).

ADDRESS TO: **Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231**

5. [ ] Microfiche Computer Program *(Appendix)*
6. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. [ ] Computer Readable Copy
   b. [ ] Paper Copy (identical to computer copy)
   c. [ ] Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

7. [X] Assignment Papers (cover sheet & document(s))
8. [ ] 37 C.F.R.§3.73(b) Statement *(when there is an assignee)* [ ] Power of Attorney
9. [ ] English Translation Document *(if applicable)*
10. [ ] Information Disclosure Statement (IDS)/PTO-1449 [ ] Copies of IDS Citations
11. [ ] Preliminary Amendment
12. [ ] Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
13. [X] * Small Entity Statement(s) *(PTO/SB/09-12)* [ ] Statement filed in prior application, Status still proper and desired
14. [ ] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
15. [ ] Other: .....

16. **If a CONTINUING APPLICATION,** *check appropriate box, and supply the requisite information below and in a preliminary amendment:*
[ ] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No: _____/_____
Prior application information: Examiner _____ *Group / Art Unit:* _____
For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

[X] *Customer Number or Bar Code Label* 24011 *(Insert Customer No. or Attach bar code label here)* or [ ] *Correspondence address below*

Name	Kia Silverbrook				
	Silverbrook Research Pty Ltd				
Address	393 Darling Street				
City	Balmain	*State*	NSW	*Zip Code*	2041
Country	AUSTRALIA	*Telephone*	61-2-9818-6633	*Fax*	61-2-9818-6711

Name (Print/Type)	Kia Silverbrook	*Registration No. (Attorney/Agent)*	
Signature		*Date*	May 16, 2000

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

PTO/SB/10 (1-99)
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Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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STATEMENT CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) & 1.27(c))--SMALL BUSINESS CONCERN	Docket Number (Optional) NPK004US

Applicant, Patentee, or Identifier: Silverbrook Research Pty Ltd
Application or Patent No.:
Filed or Issued: May , 2000
Title: NETWORK TERMINAL AUTHORIZATION PROTOCOL

I hereby state that I am
☒ the owner of the small business concern identified below:
☐ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN Silverbrook Research Pty. Ltd.

ADDRESS OF SMALL BUSINESS CONCERN 393 Darling Street, Balmain, NSW 2041, Australia

I hereby state that the above identified small business concern qualifies as a small business concern as defined in 13 CFR Part 121 for purposes of paying reduced fees to the United States Patent and Trademark Office. Questions related to size standards for a small business concern may be directed to: Small Business Administration, Size Standards Staff, 409 Third Street, SW, Washington, DC 20416.

I hereby state that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

☒ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each individual, concern, or organization having rights in the invention must file separate statements as to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization having any rights in the invention is listed below:
☒ no such person, concern, or organization exists.
☐ each such person, concern, or organization is listed below.

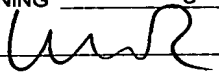
Separate statements are required from each named person, concern or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

NAME OF PERSON SIGNING Kia Silverbrook

TITLE OF PERSON IF OTHER THAN OWNER

ADDRESS OF PERSON SIGNING 393 Darling Street, Balmain, NSW 2041, Australia

SIGNATURE  DATE May 16, 2000

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FEE TRANSMITTAL for FY 2000

Patent fees are subject to annual revision.
Small Entity payments must be supported by a small entity statement, otherwise large entity fees must be paid. See Forms PTO/SB/09-12.
See 37 C.F.R. §§ 1.27 and 1.28.

TOTAL AMOUNT OF PAYMENT ($) 425

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	Paul Lapstun
Examiner Name	
Group / Art Unit	
Attorney Docket No.	NPK004US

METHOD OF PAYMENT (check one)

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number: _____

Deposit Account Name: _____

☐ Charge Any Additional Fee Required Under 37 CFR §§ 1.16 and 1.17

2. ☒ **Payment Enclosed:**
☒ Check ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	690	(201)	345	Utility filing fee	345
106	310	206	155	Design filing fee	
107	480	207	240	Plant filing fee	
108	690	208	345	Reissue filing fee	
114	150	214	75	Provisional filing fee	

SUBTOTAL (1) ($) 345

2. EXTRA CLAIM FEES

	Extra Claims		Fee from below		Fee Paid
Total Claims	17 -20** =	0	x 9	=	0
Independent Claims	1 - 3** =	0	x 39	=	0
Multiple Dependent				=	0

***or number previously paid, if greater; For Reissues, see below*

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	18	(203)	9	Claims in excess of 20
102	78	(202)	39	Independent claims in excess of 3
104	260	204	130	Multiple dependent claim, if not paid
109	78	209	39	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet.	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	380	216	190	Extension for reply within second month	
117	870	217	435	Extension for reply within third month	
118	1,360	218	680	Extension for reply within fourth month	
128	1,850	228	925	Extension for reply within fifth month	
119	300	219	150	Notice of Appeal	
120	300	220	150	Filing a brief in support of an appeal	
121	260	221	130	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,210	241	605	Petition to revive - unintentional	
142	1,210	242	605	Utility issue fee (or reissue)	
143	430	243	215	Design issue fee	
144	580	244	290	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stmt	
581	40	(581)	40	Recording each patent assignment per property (times number of properties)	80
146	690	246	345	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	690	249	345	For each additional invention to be examined (37 CFR § 1.129(b))	

Other fee (specify) _____

Other fee (specify) _____

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 80

SUBMITTED BY				Complete (if applicable)	
Name (Print/Type)	Kia Silverbrook	Registration No. (Attorney/Agent)	24011	Telephone	61-2-9818-6633
Signature				Date	May 16, 2000

WARNING:

Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

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In the United States Patent and Trademark Office

Docket Number: NPK004 US

Application Filed: May 23, 2000

Applicant Name: Silverbrook Research Pty. Ltd.

Title: Network Terminal Authorization Protocol

Petition to Make Special

Assistant Commisioner for Patents
Washington, District of Columbia 20231

Sir,

Applicant hereby respectfully petitions that the above application be made special under MPEP Sec. 708.02 for the following reasons; attached is a declaration in support thereof:

V. Environmental Quality Will Be Enhanced

VI. Energy Savings Will Result

Very respectfully,

Kia Silverbrook

Silverbrook Research
393 Darling St. Balmain
NSW 2041 Australia

Ph. +61 2 9818 6633
email: kia@silverbrook.com.au

In the United States Patent and Trademark Office

Docket Number: NPK004US
Application filed: 23 May 2000
Applicant: Silverbrook Research

Declaration in Support of Accompanying Petition to Make Special

In support of the accompanying Petition to Make Special, applicant declares as follows:
1. Silverbrook Research is the applicant in the above identified patent application.
2. The present invention is part of a multi-facetted effort to develop a new form of information distribution. The system, collectively called "Netpage", has the potential to substantially reduce energy use, transportation requirements, and paper use, giving environmental benefits such as reduction of carbon emissions, maintenance of biodiversity, and a reduction in pollution. These benefits fall under two reasons to make special under MPEP Sec. 708.02, as explained below.

Reason V – Enhancement of Environmental Quality

Netpage can significantly reduce the use of paper in many industries. Some examples are:

- Approximately 40% of all magazines printed remain unsold or are otherwise junked before they reach a reader. This inefficiency in inherent in the 'print and distribute' system that must be used by commercial printers due to the current absence of a viable digital home magazine printing technology. Most magazines also have many more pages than are likely to be read. Netpage allows only those pages which are of interest to the reader to be printed. This number of pages will vary from reader to reader, but may be around one quarter as many as are in current magazines. Thus, if Netpage is used for magazine distribution, the paper use may be reduced by around 90%.
- Newspapers – In 1986, US newspapers used 13 million tons of paper. A substantial majority of newspaper pages go unread, as they are not printed selectively for each reader. A customized newspaper need only have a small fraction of the pages of a traditional newspaper, and can therefore use proportionally less paper.
- Direct mail – the typical response rate for direct mail such as brochures and catalogs is around 2%. This means that 98% of all of the paper used in direct mail is wasted. Studies have shown that by targeting direct mail only to those who are in the appropriate demographic, the amount of paper use can be reduced to around 10% of a 'scattershot' approach. Netpage uses extensive demographic interest profiles to allow efficient delivery of direct mail to only those people who are likely to be interested.
- Netpage prints on both sides of the page simultaneously. This almost halves the amount of paper used compared to single sided printing, as is typically used with computer printers.

Reason VI – Energy Savings

The energy savings from a reduction in paper use are substantial. The primary energy cost of manufacturing paper in 1998 was around 17.8 gigaJoules per tonne [1]. Using this figure, the 13 million tons of paper used by US newspapers in 1986 would have required around 230 petaJoules to manufacture. This is equal to a continuous consumption of 7.4 gigaWatts over the year.
If the amount of paper in those newspapers was halved by using the Netpage system disclosed herein, the power savings in the US would be around 3.7 gigaWatts, equal to the output of about four full scale nuclear, coal, or natural gas electricity generating plants.
Similar energy savings can be achieved for magazines, direct mail, and other printed media.

Netpage can also operate as a 'web browser' using the interactive paper technology developed as part of this project. Most of the everyday functions of current computer based web browsers can be achieved using interactive paper, reducing the need for personal computers to operate as browsers.

The Memjet™ printing technology invented for this project has an energy consumption of around 120 nanoJoules per printed drop, compared with several microJoules per drop for thermal inkjet technologies. This dramatic reduction in energy allows a Netpage printer to consume typically less than 50 Joules to print a full color double sided sheet of paper. Unlike a computer screen, once the page is printed, there is no further energy consumption to keep the images displayed.
The Netpage printer goes into 'sleep' mode when not printing, with very low power consumption.

By comparison, estimates of the annual energy use of a household personal computer range from 130 to 262 kilowatt-hours (468 to 943 megaJoules) per year [2]. This is sufficient energy for a Netpage printer to print around 24 million pages.

However, a PC based web browser does not require sheets of paper to operate. For a balanced comparison with PCs, the energy cost of manufacturing this paper must be taken into account. An energy cost of 17.8 gigaJoules per tonne of paper equates to 53.69 kiloJoules per letter sized 50 GSM sheet. Including the 50 Joules required for a Netpage printer to print the sheet results in a total of 53.74 kiloJoules.

A magazine-quality double-sided sheet of paper can display around 10 computer screens worth of information. The time taken for someone to read 10 screens of information is approximately 10 minutes. A typical desktop personal computer consumes around 200 Watts, so 10 minutes operation results in an energy consumption of 120 kiloJoules. Therefore, the energy cost of both manufacturing the paper sheet and printing it may be around half the energy used in reading the equivalent information on a computer screen.

As computers currently consume around 2% of the entire US electricity supply [2], and as internet access is a major and growing application of computers, substantial energy savings are possible by replacing the PC with more energy efficient means of internet access.

[1] Paper Federation of Great Britain

[2] Statement of Jay E. Hakes, Administrator, Energy Information Administration, Department of Energy, before the Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs, Committee on Government Reform, United States House of Representatives, February 2, 2000

I further declare that all statements made herein of my own knowledge are true and that all statements made upon information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application and any patent issuing therefrom.

Very respectfully,

Kia Silverbrook

Silverbrook Research
393 Darling St
Balmain NSW 2041
Australia